

US EPA ARCHIVE DOCUMENT

EXECUTIVE SUMMARY

WHAT DID CONGRESS ASK EPA TO DO?

In September 1992, Congress directed the Environmental Protection Agency (EPA) to develop and submit a Report to Congress on flow controls as a means of municipal solid waste (MSW) management. Congress asked EPA to:

- ◆ present a comparative review of States with and without flow control authority;
- ◆ identify the impact of flow control ordinances on protection of human health and the environment; and
- ◆ identify the impact of flow control on the development of State and local waste management capacity and on the achievement of State and local goals for source reduction, reuse and recycling.

WHAT ARE FLOW CONTROLS?

Flow controls are legal authorities used by State and local governments to designate where MSW must be taken for processing, treatment or disposal. This waste management approach requires waste to be delivered to specific facilities such as waste-to-energy (WTE) facilities, materials recovery facilities (MRFs), composting facilities, transfer stations and/or landfills. The facilities can be either publicly or privately owned. One of the direct effects of flow control is that designated facilities are assured of receiving a guaranteed amount of MSW and/or recyclable materials. If the designated facilities charge a "tipping fee" for receipt of the MSW/recyclables, flow control assures a source of revenue to meet their capital and operating costs.

WHAT FACTORS ENCOURAGE USE OF FLOW CONTROLS?

Use of flow controls took hold in the late 1970s. State and local governments began using flow controls primarily to support the development of new MSW capacity, particularly if it required large capital investment (e.g., financing of WTE facilities). Flow controls assisted State and local governments in financing these facilities by ensuring long-term receipt of enough waste to generate sufficient revenues to pay facility debt service and other costs.

Also influencing use of flow controls were State goals and mandates for increased recycling or diversion of specific wastes (e.g., yard trimmings) from landfills. Flow control was one mechanism used by local governments to generate needed revenues to pay for programs and to direct waste to recycling/composting facilities. This enabled them to respond to State recycling goals and mandates.

As local governments expanded waste management services, flow controls were utilized as a mechanism to ensure funding for various components of their solid waste management systems such as source reduction programs, household hazardous waste collection, and public education. These services typically do not lend themselves to collection of revenues as do facility-based components (e.g., tipping fees at transfer stations, WTE facilities and landfills). The most frequent rationale for

adopting flow control is to assure the financial viability of waste management facilities by providing a reliable, long-term supply of waste. This assurance can be instrumental in securing capital to finance the construction of a facility.

Flow control also may facilitate solid waste planning and management. State and local governments can plan for the appropriate type, number, and size of facilities to handle the long-term generation of waste within a specific area.

HOW DID EPA APPROACH THE CONGRESSIONAL REQUEST?

In an effort to analyze the issues posed by Congress, EPA

- ◆ held public meetings to obtain information from interested stakeholders;
- ◆ examined States' solid waste management laws to compare flow control authorities across the United States; and
- ◆ performed a market analysis of the four primary MSW management segments (i.e., composting, recycling, combustion and landfills) to assess the role of flow control in ensuring MSW management capacity and in attaining goals for source reduction, reuse and recycling.

The approach provided EPA with a *national* view of the need for flow controls. The Agency recognizes that local circumstances may differ substantially from the national perspective. Each State and local government needs to consider local conditions and alternatives when determining the need for flow control. If a State or local government has relied on flow control to achieve certain ends, sudden elimination of flow control may disrupt ongoing solid waste practices.

WHAT ARE THE FINDINGS?

Congressional Question: *Present a comparative review of States with and without flow control authority.*

Finding: *Thirty-five States, the District of Columbia, and the Virgin Islands authorize flow control directly; four additional States authorize flow control indirectly through mechanisms such as local solid waste management plans and home rule authority; eleven States have no flow control authority.*

Discussion: No primary source of information was available which identified States with and without flow control authority or those local governments implementing flow control within the States. Developing a complete picture of the nationwide scope of flow control laws would be an extremely complex task due to the differences among State laws, the dynamics of the solid waste industry, and the variability of infrastructures among local governments across the nation. EPA determined that a comparative review of State flow control authorities could be presented by (1) reviewing State statutes and

regulations, and (2) developing case studies to illustrate how local MSW programs are implemented with and without flow controls.

As shown in Exhibit ES-1, 35 States, the District of Columbia, and the Virgin Islands explicitly authorize flow control. However, not all jurisdictions exercise this authority. For example, Illinois has authority to implement flow control, but there is no evidence that local governments within the State currently use it. Also, a number of States impose administrative requirements which must be met before local governments can implement flow control, such as demonstrating a need for flow control, holding public hearings, and/or first attempting to negotiate contracts with the private sector. Of the 35 States which authorize flow control, 23 (and the District of Columbia) limit some or all recyclable materials from coverage under flow control.

Four States authorize flow control indirectly through mechanisms such as home rule (MA, MD) or the State/local solid waste management planning process (MI, TX). In a home rule State, municipalities may exercise power over local issues to the extent not prohibited or regulated by the State. Using home rule authority, municipalities may establish flow controls over their solid waste. In

EXHIBIT ES-1

Contains Data for
Postscript Only.

Michigan and Texas, municipal solid waste planning documents determine capacity needs and can authorize flow control as part of the plans' requirements.

Eleven States (AK, AZ, CA, ID, IN, KY, KS, NV, NM, SC, UT) have no flow control authority.

Congressional Question: *Identify the impact of flow control ordinances on protection of human health and the environment.*

Finding: *Protection of human health and the environment is directly related to the implementation and enforcement of federal, State, and local environmental regulations. Regardless of whether State or local governments administer flow control programs, States are required to implement and enforce federally approved regulations that fully protect human health and the environment. Accordingly, there are no empirical data showing that flow control provides more or less protection.*

Discussion: In the United States, approximately 80 percent of MSW is managed in landfills and combustors. Landfills and municipal waste combustors are controlled by State and federal regulations which are implemented through facility permitting and compliance assurance programs. These programs are designed for the express purpose of protecting human health and the environment and require the same level of control whether or not the waste is subject to flow controls.

In recent years, States have begun regulating composting and recycling facilities to protect human health and the environment, without regard to whether the materials are subject to flow controls. Further, our market analysis shows that only a small percentage of recovered materials managed by the composting and recycling segments is affected by flow control ordinances. Also, many States that authorize flow control explicitly exclude certain recyclables from flow control restrictions.

Congressional Question: *Identify the impact of flow control on the development of State and local waste management capacity and on the achievement of State and local goals for source reduction, reuse, and recycling.*

Finding: *Flow controls play a limited role in the solid waste market as a whole. Flow controls are not typically utilized by landfills or composting facilities. Less than 3 percent of the recycling market is subject to flow controls; however, approximately 19 percent of the materials handled by existing MRF-based recycling programs are supported by flow controls. Flow controls play the largest role in the waste-to-energy market where at least 58 percent of the throughput is supported by flow controls.*

Although flow controls have provided an administratively efficient mechanism for local governments to plan for and fund their solid waste management systems, there are alternatives. Implementation of these alternatives by communities currently relying on flow controls could be disruptive and take time.

Accordingly, there are no data showing that flow controls are essential either for the development of new solid waste capacity or for the long term achievement of State and local goals for source reduction, reuse and recycling.

Discussion: EPA conducted a market analysis to determine whether market intervention in the form of flow controls is needed to ensure adequate capacity or to achieve State and local recycling goals. Our analysis addressed discrete market segments (i.e., composting, recycling, combustion, and landfills) that both work together and compete to perform the complete job of solid waste management in communities. The analysis uses a number of indicators to assess market conditions and the prevalence of flow controls for these segments. The indicators include growth trends, ownership patterns, cost competitiveness, and capital requirements. These indicators are rough measures that enable an assessment of the role of flow controls in ensuring MSW management capacity and in attaining State and local goals. However, they cannot capture the realities of every specific MSW market. Due to data limitations, the report does not analyze price-cost relationships in jurisdictions with and without flow control. Appendix I-A presents a summary of public comments, some of which discuss the economic impacts of flow control.

Following is a summary of the analysis of each of the four market segments, as well as a discussion of integrated solid waste management (ISWM) systems.

COMPOSTING

The two subsegments reviewed included yard trimmings composting and mixed-waste composting. Yard trimmings composting accounts for 96 percent of this segment. **From a national perspective, flow controls generally have not been an important factor in the compost segment. However, in some communities, higher tipping fees at flow control facilities have provided a funding mechanism to subsidize compost facilities.**

Market Growth

The composting market segment grew from 0.5 million tons of recovered material in 1988 to over 9.2 million tons in 1992. In addition, the number of yard trimmings composting facilities increased by 361 percent between 1989 and 1993, going from 651 to 3,000 facilities. Enactment by 27 States (and the District of Columbia) of bans on landfilling of yard trimmings has fostered the rapid expansion of the composting market segment.

The trend is for continued growth in the number of yard trimmings composting facilities; such growth in the mixed waste composting sector is not as likely. Based on the following factors, the composting market segment should be capable of ensuring additional capacity independent of flow control:

- ◆ recent growth;
- ◆ an expanding number of States with bans on landfilling of yard trimmings;
- ◆ an ample supply of compostable materials and expanding end-markets especially in the agricultural sector; and
- ◆ the increasing number of governmental agencies which are establishing procurement policies that favor the purchase of compost for public spaces and parks.

Impact of Flow Controls

Although flow controls are used to guarantee waste for some of the 21 mixed waste composting facilities, EPA found no evidence that they are used widely to guarantee waste flows for yard trimmings composting facilities. However, local jurisdictions will sometimes subsidize composting facilities with part of the revenue received from the higher tipping fees at flow control facilities.

RECYCLING

The recycling market subsegments reviewed included materials recovery facilities (MRFs) and other recycling operations (i.e., independent recovered paper and paperboard dealers, industry-sponsored buy-back programs and drop-off centers, and mixed waste processing facilities). **For the recycling segment, flow control has been an important factor for MRFs, particularly MRFs that require substantial capital investments. Thirty-two (32) percent of waste handled by "high technology" MRFs is supported by flow controls. An additional 50 percent of high technology MRFs have waste guaranteed through contractual arrangements, some of which may be supported by flow control.**

Market Growth

Between 1985 and 1992, there was a 150 percent increase in the recycling market going from 16 million tons of recycled materials in 1985 to over 40 million tons in 1992. The growth in the recycling market is demonstrated by the following factors:

- ◆ Curbside collection programs grew from 1,000 programs in 1988 to over 6,600 programs in 1993 (568 percent increase);
- ◆ Recycling or waste reduction goals have been established in 43 States and the District of Columbia; some of these States also have banned the landfilling of recoverable items such as batteries and tires;
- ◆ The number of MRFs increased from 13 facilities in 1985 to 198 in 1992, with a 100 percent increase between 1990 and 1992.

A continuing expansion of end-market facilities that use recycled materials (e.g., paper mill de-inking facilities) indicates that the recycling segment will continue to account for an increasing share of the MSW management market.

Impact of Flow Controls

EPA estimates that only 2.7 percent of the 40 million tons of recyclable materials is subject to flow controls. The analysis indicates that flow controls are not used for paper packers and buy-back/drop-off programs, which represent 85 percent of the recycling market. Conversely, flow controls do play a role in the MRF segment of the recycling market. In 1992, 13 percent of MRFs (26 facilities), with 19 percent (1.1 million tons) of the throughput, received waste guaranteed by flow control. In addition to MRFs supported by flow control, a significant amount of MRF throughput is guaranteed by contractual arrangement: 41 percent of MRF (82 facilities), with 44 percent (2.5 million tons) of total throughput. Local government may use flow control to ensure that enough waste is delivered to meet the terms of the contract.

Flow controls have been more important for high-technology MRFs than for low-technology MRFs. Flow controls direct 32 percent of the throughput at high technology MRFs (17 facilities), compared to only seven percent of throughput in low-technology MRFs (9 facilities). Another 24 MRFs were planned to be operational after 1992; these will be predominately (i.e., 17 out of 24) high-technology MRFs. Six of the high tech MRFs, with 18 percent of the throughput, are expected to be supported by flow controls. For the seven low-technology MRFs that are planned to be operational after 1992, only one is expected to be supported by flow controls. The difference in use of flow controls by high-technology and low-technology MRFs reflects the greater capital costs of the former (\$4.8 million on average) compared to the latter (\$1.9 million on average).

Flow control support of MRFs is largely regional. Of the 26 MRFs supported by flow control, 20 are located in the Northeast. The throughput of these MRFs (928,000 tons/year) represents 86 percent of the total MRF throughput nationwide that is supported by flow controls.

COMBUSTION

MSW is burned in (1) waste-to-energy (WTE) facilities that recover heat from the combustion of waste to produce either steam or electricity, and (2) incinerators that combust waste without energy recovery. Of the 32 million tons of MSW that were combusted in 1992, WTE facilities accounted for 31 million tons, and incinerators accounted for 1 million tons. **Flow controls have played a significant role in the waste-to-energy market segment, with at least 58 percent of the waste throughput supported by flow control.**

Market Growth

There was a ten-fold increase in the number of WTE facilities operating between 1980 and 1990. However, only a modest gain in the amount of waste managed by the WTE sector is expected in the future for the following reasons:

- ◆ significant slow down in the planning and construction of new WTE facilities in recent years;

- ◆ higher capital requirements due to the cost of land and pollution control measures;
- ◆ increased emphasis on recycling and waste reduction strategies;
- ◆ public opposition; and
- ◆ State moratoria.

Impact of Flow Controls

Flow controls have played a significant role in the WTE market segment. Of the 145 existing WTE facilities, 61 have waste guaranteed by flow control ordinances, representing 58 percent of total WTE throughput. One reason for this high percentage is the substantial capital investment required to construct WTE facilities, which typically are financed over long time periods. WTE facility owners and operators need to ensure adequate, long-term supplies of waste and operate at sufficient levels of capacity in order to generate revenues to meet debt payments.

An additional 40 facilities receive waste guaranteed by contracts, representing 31 percent of the total WTE throughput. The contractual arrangements may, but need not, be supported by some form of municipal control over waste disposition: the municipality may collect the waste itself, use contracts or franchises to control the ultimate destination of waste collected, and/or enact a flow control ordinance. For example, a local government may use a flow control ordinance to ensure that enough waste is delivered to meet the terms of its contract with the facility. As a result, some of the facilities with contracts also may be backed by local governments' use of flow controls. However, data are not available currently to assess how often this situation occurs.

LANDFILLS

Historically, landfills have received the majority of solid waste generated in the United States. Landfills will continue to be important elements of ISWM systems. **The Agency could find no evidence that flow controls have played a significant role in financing new landfills or landfill expansions.**

Market Growth

The number of MSW landfills has declined rapidly since 1988, but this does not appear to have significantly affected total landfill capacity. Very small landfills appear to account for most landfill closings, and large, regional landfill openings and expansions have offset this lost capacity.

Anticipated growth in the composting and recycling segments, combined with source reduction efforts, likely will result in a continuing decline in the amount of waste received at MSW landfills in the future.

Impact of Flow Controls

Flow controls do not appear to have played a significant role in financing new landfills or landfill expansions. Private landfill firms have demonstrated their ability to raise substantial capital from publicly-issued equity offerings, indicating that investors are willing to provide capital for the expansion of landfills without flow control guarantees, in response to a perceived market demand for this segment.

INTEGRATED SOLID WASTE MANAGEMENT

State and local government officials indicated at the flow controls meetings that revenues generated by flow controls are used by some local governments to support various elements of integrated solid waste management (ISWM) systems. In addition to the facilities discussed above, flow controls are used to support waste collection services such as curbside collection for recycling. Flow controls also are used to support solid waste services and practices that generally do not lend themselves to generation of their own revenues (e.g., household hazardous waste collection, source reduction programs, solid waste planning, public awareness programs, and, in limited instances, corrective action for past practices).

Where this is done, the costs of the various facility and service elements of the system are built into the tipping fee of the WTE or other facilities to which wastes are directed through flow controls. These tipping fees often are higher than the market level. Flow controls ensure that the waste goes to these facilities, rather than to facilities with lower tipping fees. The additional revenues generated by the flow control-derived tipping fees are used to fund other elements of the waste management system such as those noted above.

IN-STATE CAPACITY

Flow control is one mechanism that State and local governments can use to foster development of in-State capacity to manage municipal solid waste. Flow controls can foster local capacity by making it easier to adequately size and finance waste management facilities. Controlling the disposition of locally-generated MSW allows planners to determine more accurately how much waste must be managed. Similarly, control of the waste ensures that waste management facilities will be fully utilized, which should result in cost-efficient operations.

This Report does not assess the relative importance of flow controls, compared to other available mechanisms, for achieving in-State capacity goals. Nor was this Report designed to determine how many State and local governments consider in-State capacity to be an important goal or how much additional waste management costs (if any) would be incurred in pursuit of such a goal.

ARE ALTERNATIVES AVAILABLE OTHER THAN FLOW CONTROL?

Approaches other than flow control which are used to produce revenues for constructing and operating solid waste management facilities can be categorized as organizational and financial alternatives.

Organizational Alternatives

By using various organizational arrangements, municipalities can direct waste to specific facilities, similar to what is accomplished through flow control. One approach is for a local government to own and operate its waste collection system, delivering the waste to the facility of its choice. Another approach is for the local government to employ the private sector, through contract or franchise arrangements, for collection services. Contract or franchise agreements can incorporate specific requirements such as the frequency of collection, inclusion of recyclables, and designation of facilities to which the collected waste is to be delivered.

Special purpose districts or utilities also can be established to manage municipal solid waste. The special district or utility then would be able to provide services directly or use a contract or franchise arrangement with the private sector for services.

Financial Alternatives

Whichever organizational alternative is chosen, the question of how to pay for the system also must be addressed. The local jurisdiction can use property taxes or other general taxes as a source of funds. User fees (either uniform or variable to reflect the amount of waste thrown away) specifically designated for MSW services can be levied on the generator by the jurisdiction or the private sector provider. Finally, market-based tip fees can be charged which take into account the facility's cost and the prices charged at competing facilities.

Taxes and user fees imposed on generators provide a reliable source of revenue. Taxes may be politically unpopular, but they are relatively easy to administer and serve as the basis for issuing general obligation bonds. User fees may be seen as equitable, especially if they vary with the amount of waste thrown away, but they involve relatively greater administrative effort. Even when administered by private service providers, user fees can provide local governments with necessary assurance of financial support when combined with long-term contracts to deliver waste to a given solid waste management facility.

Some MSW activities, such as planning and household hazardous waste collection programs, do not readily lend themselves to user charges. For example, the purpose of household hazardous waste collection programs would be defeated if user fees discouraged participation. Funding to correct environmental problems that exist at a waste management facility also may be needed. Market-based tip fees may not be able to include amounts to account for the extra costs associated with other service elements of ISWM and remain competitive. As alternatives, taxes and user fees imposed on generators are possible sources of funding for these activities.

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